

Minority report: female first year students' experience of Engineering Teams

What did/do you do?

In the academic year 2009/10 "Engineering Teams" were introduced into stage 1 of the School of Mechanical and Systems Engineering's programmes. From the first day of semester one, students were allocated (by staff) into teams of five. The allocation method ensured that each team included a mix of skills and previous performances so that no teams consisted only of academically high achieving students or, conversely, only those with relatively low entry grades. In addition (as far as possible), ex-foundation year and overseas students were distributed across the teams (Joyce and Hopkins, 2011). Care was taken to ensure that every woman student always had another female teammate. The teams were encouraged to organise themselves and work independently on several projects throughout the academic year and each had access to a tutor with whom they met regularly.

Who is involved?

Thomas Joyce and Clare Hopkins were the academics involved, and the students were studying first year Mechanical Engineering

How do you do it?

Two months after the beginning of the first semester in each academic year an online questionnaire is distributed to all students in stage 1 of the programme. This questionnaire asks six questions relating to practical issues and the students' experience of being part of their Engineering Team. The questionnaire poses statements to which students are requested to answer on a yes/no basis or a Likert scale. Students are also invited to include free text responses. These questionnaires are completed anonymously, although respondents are asked to indicate their gender. It was therefore possible to retrospectively separate female responses for two cohorts. These were then analysed and compared to the responses from male respondents.

(Continued on page 2)

Teaching and Learning Case Study

2014/15

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Coherent Curriculum themes:

- Student induction

Other keywords:

Progression, Gender, Peer learning, Retention, Student induction, Groupwork

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(Continued from page 1)

The 11 women in stage 1 of the 2010/11 cohort were invited to take part in a focus group with a female independent researcher. Inviting all of the women to participate in the focus group offered an opportunity to witness them co-constructing their ideas through the creation of a group synergy which brings momentum to the discussion (Parker and Tritter, 2006). It also allowed the interviewer to observe and record the interactions taking place within the group, including instances of marginalisation. The focus group was recorded with the consent of all present and transcribed verbatim. Analysis of the transcripts was carried out by the researcher (C. Hopkins) using the constant comparative method (Boeije, 2002). This method involves reading and rereading the single interview transcript in order to extract the core messages through a process of fragmenting and reconnecting the emerging themes.

Why do you do it?

The new pedagogical approach aimed to increase interaction between students and to facilitate peer learning.

Does it work?

Although the women initially found it helpful to have a female teammate they were often ambivalent about it in the longer term. Generally, working in a team with male colleagues was not seen as problematic. Although none of the women participants referred to "managing" their male colleagues, descriptions of their actions and responses indicated that this was happening. Having clear aims and determination to succeed made the women feel that they were subtly different from their male colleagues, who they perceived as being less focused. Retrospective analysis of the questionnaire responses received from two cohorts of students (from which the feedback and free text comments could be extracted) showed women to be generally more positive than men about their experiences of working as part of a team.

(Continued on page 3)

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(Continued from page 2)

Within the focus group, women spoke appreciatively about other aspects of being part of an Engineering Team, echoing comments from a previous cohort of male and female students. They said that teams represented a way of getting to know others quickly, some of whom they might not have otherwise chosen to speak to. They were appreciative too of the way team working facilitated the sharing of skills and knowledge between team members.

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